American Institute of Aeronautics & Astronautics

Missile Systems Technical Committee Handbook

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1. INTRODUCTION

1.1 PURPOSE OF THIS HANDBOOK

This handbook will acquaint members of the American Institute of Aeronautics and Astronautics (AIAA) Missile Systems Technical Committee (MSTC) with the organization, objectives, and workings of the AIAA and the MSTC. The MSTC Handbook should also help to familiarize the technical aerospace community in general, and the AIAA membership in particular, with the MSTC and its functions. It should also stimulate interest in the committee's work and lead to improved communication with those who are primarily interested in the development and operation of strategic and tactical missile systems. This document provides organized support to the MSTC Chairman and members as well as enhance professionalism within the AIAA and the MSTC.

1.2 WELCOME TO NEW MISSILE SYSTEMS TECHNICAL COMMITTEE MEMBERS

Your nomination has resulted in an appointment to membership in the American Institute of Aeronautics and Astronautics (AIAA) Missile Systems Technical Committee (MSTC). We welcome you and hope that this handbook will familiarize you with the workings of the committee. The learning process must be rapid and your involvement essentially immediate. While the term of office for a technical committee member is one year, an additional two years of reappointments may be expected contingent upon your active participation in the committee and continued membership in the Institute.

Being a member of a technical committee such as the MSTC is not only a great honor provided to a select few in your field, but is also clear evidence that you are now prepared to give back to the AIAA the benefits of your experience and your talent. Your active membership in the MSTC will help support a healthy climate in the missile systems industry. Your participation in the MSTC will help with technology assessments, educational seminars, distribution of technical information through meetings and publications, and recognition of worthy individuals in our field. A strong MSTC can provide a valuable source of technical information and assistance in support of the United States Congress and the Executive Branch in the areas of strategic and tactical missile systems. We wish you good luck in your efforts to advance the objectives of the AIAA and the MSTC.

Appendix A provides the current roster of fellow MSTC members. Appendix B offers a short biography on each.

1.3 DESCRIPTION OF THE AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS

The American Institute of Aeronautics and Astronautics (AIAA) is the largest and oldest American technical society devoted to science and engineering in the field of astronautical and aeronautical technology and systems.

The AIAA's primary objectives are as follows:

- Recognize, address, and serve the interests and needs of three groups in the aerospace community: (1) general engineering personnel for whom the AIAA represents a social/professional/educational organization that supplements employer-related programs; (2) research scientists and engineers for whom the AIAA serves as a two-way channel for communications and publications; and (3) managers and decision makers for whom the AIAA serves as a network of contacts and resources.
- Involve corporations and professionals from all three groups in local- and national-level organizations.
- Use local and national technical activities committees, technical meetings, and publications to identify, capture, and promote new technologies.
- Pursue financially feasible strategies by offering products and services that make membership desirable, result in membership growth, and generate adequate revenues.
- Promote aerospace and AIAA contributions to government, industry, academia, and the public.

1.4 SUMMARY OF MISSILE SYSTEMS TECHNICAL COMMITTEE PRACTICES AND PROCEDURES

The MSTC consists of representatives from academia, government agencies, and industry. The committee meets at least three times per year. Typically, MSTC meetings are held in conjunction with national conferences sponsored by the committee. However, the MSTC can meet separately or in conjunction with a conference sponsored by another committee depending upon the pressing needs of committee business. A schedule for the calendar year is provided to MSTC members at the beginning of the year and a three-year schedule of conferences for advanced planning is made available through the MSTC handbook.

The committee meetings are under the guidance of the MSTC Chairman, following Robert's Rules of Order, and are normally scheduled so they will not conflict with the technical and social programs of the conference. A typical meeting follows a published agenda and includes such items as the presentation of minutes from the previous meeting, significant action items and general AIAA business from the Chairman, subcommittee reports and actions, a review of the previous conference, planning for upcoming conferences (discussion of themes, topics, panel members, etc.), new business from the members, and award activities. Sometimes an invited guest gives a presentation on a general topic that interests all MSTC members.

During the period between meetings, committee business is conducted through the mail and by telephone or by the Planning Committee. Minutes, including the addresses and phone numbers of the attendees, are issued to every committee member after each meeting. The MSTC maintains a three-year plan to project activities and updates this forecast on an annual basis.

2. MISSILE SYSTEMS TECHNICAL COMMITTEE CHARTER

2.1 OBJECTIVES

The objectives of the Missile Systems Technical Committee (MSTC) are as follows:

- Advance the technology and provide the forum, in both classified and unclassified settings, for the interchange of scientific ideas and technology in the areas of strategic, theater, and tactical missile systems (including UAVs and sounding rockets).
- Plan and execute technical meetings and conferences to provide a forum for those interested in exchanging information on strategic, theater, and tactical missile systems to keep informed about technical progress, both internal and external to the AIAA.
- Encourage professionalism of those concerned with missile systems programs and activities.
- Communicate information to the missile systems community so that customers may be better served.
- Conduct special projects relating to national issues on the role of tactical and strategic missile systems in national policy and national security for the evaluation of the AIAA membership and the public.
- Ensure that appropriate publications describing technical accomplishments in these fields are prepared and disseminated.
- Provide a source of counsel on these system matters to the AIAA Communications Committee and to other technical committees.
- Encourage engineering students to select careers in the missile aerospace community.

2.2 SCOPE

The committee scope emphasizes the professional development of current and potential (e.g., student) AIAA members who have career interests in research, development, deployment and sustainment associated with tactical, theater, and strategic offense or defense missile systems.

2.3 MEMBERSHIP

The MSTC membership comprises AIAA members from academia, government agencies, and industry who are involved in missile systems and related activities. The MSTC also seeks to maintain a membership that reflects a breadth of background in critical technical areas, a reasonable geographic distribution, and a balance of management and technical skills. The members are nominated by the respective companies or agencies and approved by the AIAA Deputy Director. The MSTC is ordinarily limited to 35 members, with each member serving a term not exceeding three years, except where special conditions apply. The MSTC Chairman reserves the right to increase membership beyond 35 when necessary to effectively execute the duties of the MSTC.

Membership of the MSTC includes those having broad technical backgrounds in missile systems management and technology, those having an understanding of interrelationships among component subsystem of missile systems, and those understanding missile systems usage, support, and logistics. Candidate personnel should also have perspectives that qualify them to guide the direction of the development and operation of missile programs necessary to continue the United States' technological growth.

The MSTC also may have up to two associate members. The purpose of an associate membership is to encourage missile system professionalism by introducing young and active AIAA student members into the technical committee and to provide for future growth of the committee.

The proceedings of this committee are directed by a Chairman and a Vice Chairman who are elected by the committee members, and those subcommittee members appointed by the Chairman. The Vice Chairman serves as the Chairman-Elect. The Missile Systems Technical Committee includes the following subcommittees:

- Planning (Section 4.1)
- Communications (Section 4.2)
- Membership (Section 4.3)
- Awards/Honors (Section 4.4)
- Student Design Competition (Section 4.5)
- MSTC Interests (Section 4.6)

2.4 PRINCIPAL ACTIVITIES

Principal activities of the Missile Systems Technical Committee include the following:

- Enhance professionalism within the aerospace community.
- Provide a forum within the missile systems community by sponsoring, managing, and/or supporting missile systems technical meetings, workshop, and conferences such as:
  - Biennial Missile Sciences Conference
  - Biennial Strategic and Tactical Missile Systems Conference
  - BMDO Technology Readiness Conference
  - Special Conferences sponsored by the committee to respond to the needs of current and potential members, e.g.:

    Technology Readiness

    Acquisition Reform
- Meet three or more times per year to exchange ideas and coordinate and report on future events.

- Sponsor and manage missile systems technical papers or sessions at other technical committee, society, or government conferences.
- Develop an annual highlights article for *Aerospace America* (see Appendix D).
- Develop an Annual Report (see Appendix C) and a Three-Year Conference Plan (see Appendix E).
- Lead the recognition of outstanding performance in technical management and engineering development in missile related endeavors through the implementation of the MSTC awards.
- Support other AIAA technical awards through publicity nominations, endorsements, etc.
- Support AIAA and MSTC special functions, awards, and activities.
- Sponsor engineering student design competitions.
- Maintain MSTC Membership Handbook.
- Develop position papers in areas of common interest.
- Maintain membership roster.
- Provide minutes from MSTC meetings.

3. ORGANIZATION

The Missile Systems Technical Committee consists of a Chairman, Vice Chairman (who is the Chairman-Elect), and Secretary/Treasurer, five working subcommittees, a number of leads for special interests, and 30-35 active members. All MSTC members are encouraged to work on one or more of the five standing subcommittees and/or to take an active role on the special interests of the committee.

3.1 RELATIONSHIP OF MSTC WITH THE PARENT ORGANIZATION

Figure 1 and Figure 2 (supplied by AIAA headquarters) illustrate how the AIAA technical committees fit into the AIAA organization structure. The 66 technical committees are organized into 15 technical specialty groups (TSGs). The technical specialty groups are organized under seven technical groups. These, in turn, fall under the jurisdiction of the Technical Activities Committee (TAC). The Missile Systems Technical Committee belongs to the Space and Missile Systems Specialty Group. Following are the eight other technical committees in this technical group:

- Life Sciences and Systems
- Space Automation and Robotics
- Space Operations and Support
- Space Processing
- Space Sciences and Astronomy
- Space Systems
- Space Transportation
- Weapon Systems Effectiveness

The activities of all technical committees are coordinated and administered via the Administrator of Technical Activities at AIAA Headquarters. The Vice President of Technical Activities chairs the Technical Activities Committee (TAC). The TAC administers the activities of the technical committees via deputy directors, each of whom is a member of the TAC and serves as his or her technical specialty group's representative to the TAC. The Chairman of the Missile Systems Technical Committee is invited to attend TAC and TSG meetings.

3.2 FUNCTION OF THE DEPUTY DIRECTOR OF THE SPACE AND MISSILE SYSTEMS TECHNICAL GROUP

The Deputy Director of the Space and Missile Systems Technical Group oversees the activities of the assigned committees (listed in Section 3.1). The Deputy Director is the primary link between the TAC and the above technical committees and ensures that there are no technical committee conflicts in such areas as AIAA policies, bylaws, plans, and schedules. The Deputy

Director issues an annual written report that summarizes progress, problems, needs, and activities.

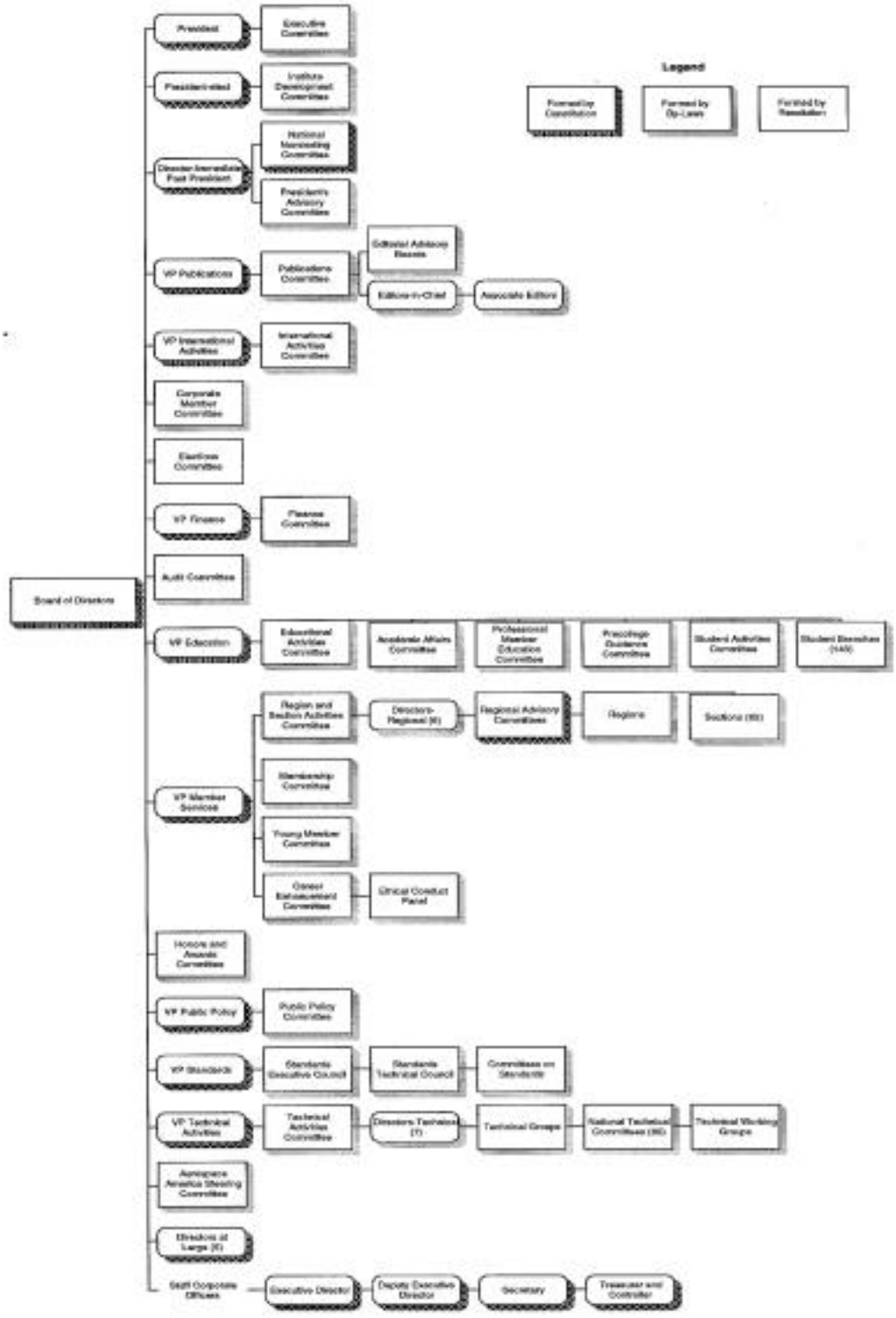

Figure 1. AIAA Organization Chart.

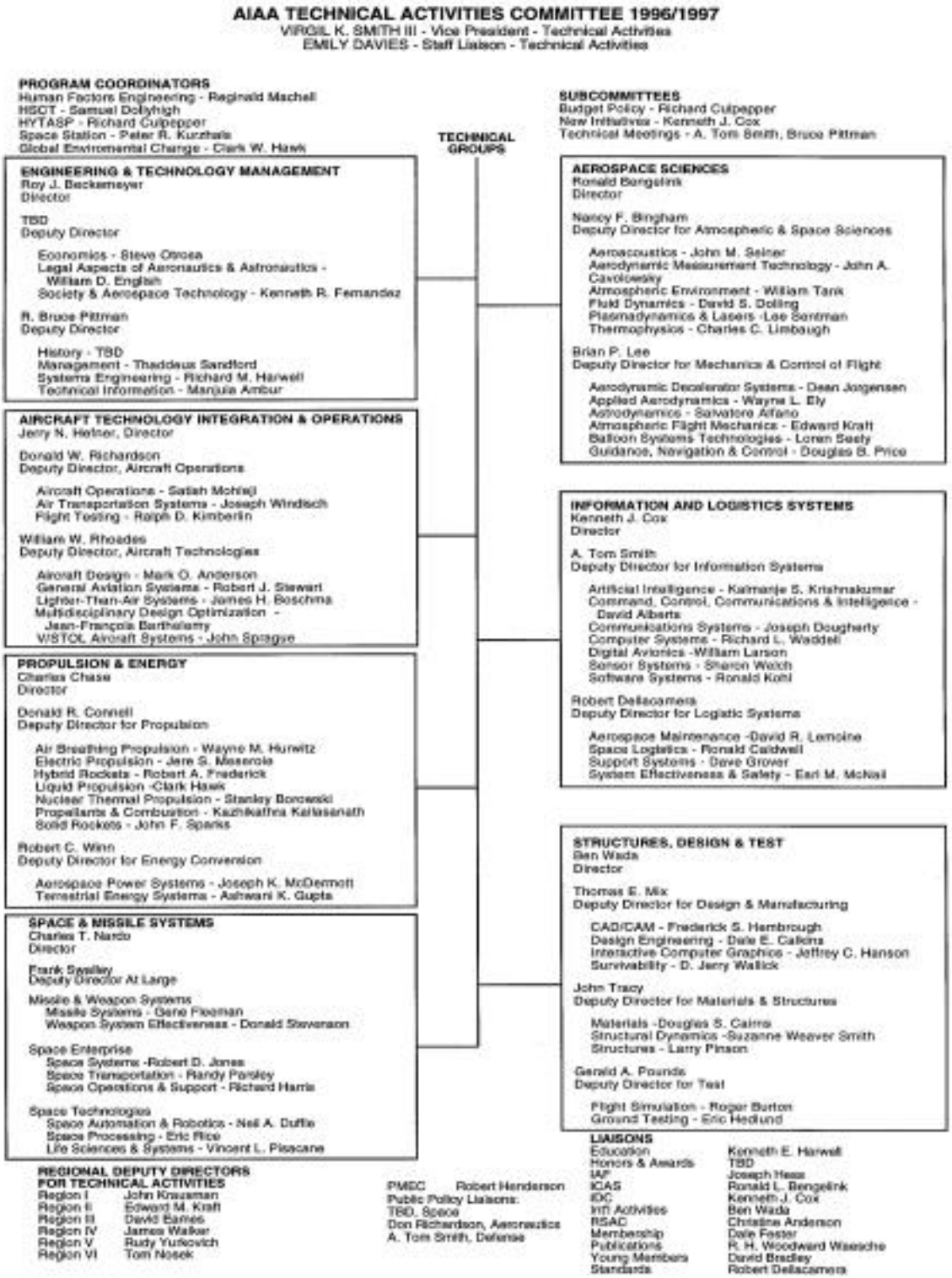

Figure 2. AIAA Technical Activities Committee.

3.3 LIAISON WITH OTHER TECHNICAL COMMITTEES

The Missile Systems Technical Committee has the option of maintaining liaison representation with any of the other AIAA technical committees in order to coordinate activities of mutual interest. Examples include:

- AIAA Technical Activities Committee
- Space and Missile Systems Group
- Space Transportation Technical Committee
- Space Operations and Support Technical Committee
- Space Systems Technical Committee
- Atmospheric Flight Mechanics Technical Committee
- Aircraft Design Technical Committee
- Guidance and Control Technical Committee
- Weapon System Effectiveness Committee
- Students Activities Committee

Concurrently, other AIAA technical committees may establish liaison with MSTC so that they can participate in conferences and technical programs which MSTC sponsors.

The committee periodically reviews the need for liaison representation with other AIAA and technical committees.

The Chairman appoints liaison representatives. The duties of these representatives include attending relevant meetings of those committees and reporting areas of interest and possible joint activities to the MSTC.

3.4 SELECTION AND TERMS OF MSTC COMMITTEE MEMBERS

Each year the AIAA, via the Technical Activities Committee (TAC), solicits nominations for the technical committees from the Board of Directors, the TAC, technical committee chairmen, current technical committee members, AIAA student faculty advisors, AIAA corporate member contacts, NASA Directors, and various other government agencies, administrators, and military commands.

Upon recommendation of the appropriate technical committee Chairman to the TAC, the President of AIAA appoints technical committee members to one-year terms. Thereafter, members with recommendations from the MSTC Chairman may be appointed to additional two-year terms. New members are notified of their selection by mail. Membership on more than one technical committee at a time is not permitted.

Membership on the MSTC signifies that one is a volunteer agent for the professional sector who joins others in the same discipline in ensuring that progressive projects and meetings are held within the discipline. In accordance with a written statement from the nominee's department head or parent organization, it is understood that each appointed member will travel to at least two technical committee meetings per year and have some time to devote to committee business

with parent organization funding. If a member cannot attend a technical committee meeting, he or she should notify the MSTC Chairman.

3.5 SELECTION AND TERMS OF MSTC COMMITTEE OFFICERS

Biennially, the MSTC elects a member to serve a four-year term. The elected MSTC member serves the first two-year period of his term as MSTC Vice chairman and the second two-year period of his term as MSTC Chairman. By this means, an independently elected MSTC Vice Chairman will first support and then succeed an elected MSTC Chairman, thereby ensuring a succession of experienced MSTC officers.

Nominations for the biennial MSTC executive election are sponsored by an MSTC Planning Nominating Committee chaired by the MSTC Vice chairman, staffed by MSTC members. The MSTC executive election is held biennially as early as the fall (September or October) MSTC meting, which is typically two MSTC meetings prior to the May Executive Officer appointment date. Nominees are selected from the MSTC membership as a whole. The four-year MSTC Executive Officer appointment period allows a special exception to the nominal three-year AIAA Technical Committee appointment rule.

The MSTC Chairman appoints MSTC Subcommittee Chairmen with concurrence of the Planning Committee based upon nominations obtained from the MSTC membership. The MSTC Subcommittee Chairman appointment terms are one year.

All MSTC officers, including the three executive officers (i.e., MSTC Chairman, MSTC Vice-Chairman, and MSTC Secretary/Treasurer) and the MSTC Subcommittee Chairmen (i.e., Communications, Membership, Awards/Honors, Student Affairs, and Planning) have biennial appointment terms that run concurrently with the AIAA/TAC May-to-April technical committee member appointment year. Leads for “special interests” of the MSTC are appointed by the MSTC Chairman for periods of mutual interest to the member and the MSTC, but not to exceed the typical three-year membership term. Figure 3 is an organization chart of the MSTC that illustrates these functions. Section 4 of the handbook explains the objectives and duties of the MSTC subcommittees.

3.6 MSTC CHAIRMAN RESPONSIBILITIES

The MSTC Chairman, who serves a two-year term, determines MSTC meeting agendas, locations, and times; chairs MSTC meetings; supervises MSTC activities; designates the Secretary/Treasurer and subcommittee Chairmen; assigns subcommittee tasks and members; controls the membership roster; and submits any necessary reports such as the annual report.

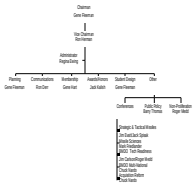

Figure 3. Missile Systems Technical Committee Organization.

3.7 MSTC VICE CHAIRMAN RESPONSIBILITIES

Besides chairing MSTC meetings and performing functions in the Chairman's absence, the Vice chairman serves as the Chairman-Elect and regularly assists the Chairman. In addition, the Vice-Chairman serves as Chairman of the biennial Vice-Chairman Nominations and Elections Subcommittee and is responsible for establishing ad hoc subcommittees which can assess and recommend future changes in MSTC vision, mission and roles, scope, special interests, etc., which can be implemented upon concurrence of the MSTC.

3.8 MSTC SECRETARY/TREASURER RESPONSIBILITIES

The Secretary/Treasurer, who is appointed by the MSTC Chairman, prepares MSTC meeting minutes and distributes them to members, maintains the MSTC budget, maintains MSTC documents (including the charter), serves on the MSTC Planning committee, and performs other duties as assigned by the Chairman.

This function (Secretary/Treasurer) exists at the discretion of the MSTC Chairman. For example, the MSTC Chairman may choose to request the assistance of a non-MSTC (or even non-AIAA) individual to be responsible for MSTC administrative functions if it benefits the efficiency and effectiveness of the MSTC operation. In this case, the position is called the MSTC Administrator.

4. MSTC SUBCOMMITTEES

Each member of the MSTC is expected to serve on a subcommittee of the MSTC. The Chairman of each subcommittee provides updates of activities during meetings of the technical committee. The objectives, duties, and schedule of each of the subcommittees follow. In addition, the MSTC as a whole oversees the national conferences that the committee sponsors. An ad hoc subcommittee is appointed for each conference, such as Missile Sciences and Strategic and Tactical Missile Systems. Section 5 of this handbook outlines the details of these conferences.

4.1 PLANNING SUBCOMMITTEE

4.1.1 Objectives and Organization

The Planning Subcommittee assesses the performance of the MSTC and develops guidance and policies to ensure that the MSTC achieves its stated goals and charter responsibilities. It assists the MSTC Chairman in the development of MSTC plans, committee member assignments, and other requirements in response to AIAA guidance and MSTC needs.

The Planning Subcommittee is composed of the duly elected MSTC Chairman, MSTC Vice Chairman, and MSTC Secretary/Treasurer. At the discretion of the Planning Subcommittee Chair, generally in response to special needs, other members of the MSTC may be appointed to the Planning Subcommittee for a variable term. The Planning Subcommittee is chaired by the MSTC Chairman.

4.1.2 Duties and Yearly Schedule

Duties and yearly schedule of the Planning Subcommittee are listed in Table 1.

Table 1. Planning Subcommittee Duties and Yearly Schedule.

Duties	Schedule
Develop MSTC Master Plan	Yearly meeting, May to June, ad hoc meetings as necessary
Review and assess MSTC progress	Yearly meeting, December to January
Select MSTC membership appointments	Yearly meeting, October to November
Select Subcommittee Chairmen appointments	Yearly meeting, December to January
Develop MSTC responses to AIAA/TAC requests	Ad hoc meetings as necessary
Support MSTC Chairman special assignments	Ad hoc meetings as requested by MSTC Chairman
Make MSTC Executive Nominations	Biennial meeting, August to September (prior to MSTC fall meeting)

4.1.3 Operating Procedures

Generally, informal Planning Subcommittee meetings discuss and act upon pressing or scheduled MSTC business. Agenda, membership meetings, location, and schedule will be held as defined in Table 1 or at the discretion of the MSTC Planning Subcommittee Chairman. Most Planning meetings will be held between MSTC meetings.

4.2 COMMUNICATIONS SUBCOMMITTEE

4.2.1 Objectives and Organization

The Communications Subcommittee ensures that the written documentation required of the MSTC is delivered properly and on time. It provides the annual highlights article for *Aerospace America.* It also ensures that missile systems activities are well represented in applicable journals and publications, publicizes awards, promotes communications within the MSTC, and interfaces with other technical committees.

4.2.2 Duties and Yearly Schedule

Duties and yearly schedule of the Communications Subcommittee are listed in Table 2.

Table 2. Communications Subcommittee Duties and Yearly Schedule.

Duties	Schedule
Develop highlights article for *Aerospace America*	Receive request by June 1. Final draft is due September 1 to be published in December issue (see Appendix D).

4.2.3 Operating Procedure

The communications subcommittee will meet, as necessary, throughout the year to ensure that MSTC "deliverables" are made available coherently and on time. In addition, the subcommittee will meet, as needed, to promote the conferences and other initiatives of MSTC.

4.3 MEMBERSHIP SUBCOMMITTEE

4.3.1 Objectives and Organization

The objectives of the Membership Subcommittee are to encourage the active participation of AIAA members on the Missile Systems Technical Committee, establish criteria for selection to the MSTC, and recommend to the MSTC Chairman and the MSTC those AIAA candidates who should be selected for MSTC membership.

The Membership Subcommittee encourages MSTC participation by AIAA members sincerely interested in advancing aerospace career professionalism in fields encompassed by the disciplines associated with missile systems. MSTC members must have the backing of a sponsoring

organization to devote a reasonable amount of time and travel during a calendar year. Participation in two MSTC meetings per year is a minimum essential criteria.

The Membership Subcommittee is responsible for establishing criteria so that MSTC is truly a diverse organization composed of government executives or program managers; government laboratory or agency technical leaders; industry program, project managers or technical leaders; and interested participants from academic fields related to missile systems. MSTC participation is typically limited to a single individual from a sponsoring organization. However, the "organization" can be defined by the Membership Subcommittee to exist at lower levels so that more than one member on the MSTC can represent, for example, the U.S. Air Force or a defense industrial team.

Applicants who are interested in becoming members of the MSTC must complete the form shown in Figure 4 and provide the completed application to the MSTC Membership Subcommittee and AIAA TAC membership (Emily Davies).